Clinical oncology nurses' perceptions of research

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Abstract

Within the realm of oncology nursing, research has been an integral part in its development as a specialty practice. Yet despite the growing volume of published nursing research studies, little is known about how nurses working in oncology care settings perceive research. Therefore, the purposes of this study were to examine clinical oncology nurses' perceptions of research and to determine factors influencing their perceptions. Two hundred and eighty-three registered nurses providing cancer care to patients in 40 health care agencies across northern Ontario participated in the survey. Data were collected using a questionnaire developed by Atcock and colleagues (1990) which addressed nurses' perceived value of research, their role, interest and experience in research as well as the research climate of the agency. The findings showed that respondents valued nursing research and perceived a research role for staff nurses. However, the respondents did not perceive strong administrative or collegial support for nurses' involvement in research activities. In addition, the study results indicated that the clinical oncology nurses' perceptions of research were influenced by educational preparation.

Introduction

Numerous papers have appeared in the literature emphasizing the importance of nursing research and its relationship to clinical practice (Boehm, 1985; Christoph, 1988; Jacox, 1974; MacPhail, 1991; McClure, 1981; Mercer, 1984; Schlottfeldt, 1992). In these essays and articles, the significance of research has been described for both nursing and the nurse. For the profession, research provides evidence of the discipline's credibility, accountability and unique contributions to patient care and health outcomes. For the individual nurse, research provides a body of knowledge upon which to base sound clinical decisions and develop higher standards of nursing practice and patient care.

An overview of the past three decades shows that progress has been made in the domain of nursing research. Nurses have gained increased access to formal research courses and education through the establishment of baccalaureate and post-basic degree programs as well as post-graduate nursing programs (MacPhail, 1991). Research productivity is evident by the growing numbers of published nursing research studies and national and international nursing research conferences. In addition, professional nursing associations have

published statements outlining the research expectations for nurses at all levels (American Nurses' Association [ANA], 1981; Canadian Nurses' Association [CNA], 1984; 1985; 1990). Such opportunities and activities have contributed positively to the goal of research-based nursing practice.

However, what remains unclear is whether these accomplishments have been matched with a parallel increase in research-mindedness among nurses in clinical settings. Research-mindedness has been defined as a "critical and questioning approach to one's work, the desire and ability to find out about the latest research... and the ability to assess its value to situations and apply it as appropriate" (Royal College of Nursing, as cited in O'Brien & Heyman, 1989 p.393). Research-mindedness is a necessary ingredient for the full realization of research-based practice in nursing workplaces. It includes nurses' awareness and appreciation of the benefits of research to nursing practice and patient care. Thus, nurses' attitudes towards research and how they perceive their role in research underlie the concept of research-mindedness.

Literature review

Both the professional and research literature indicate that an important factor in developing clinical nursing research programs is the commitment by nurse clinicians that research is a valued nursing domain. Anecdotal reports published in the 1970s and early '80s revealed that nursing research was not a top priority with clinical nurses at that time (Jacox, 1974; Ketefian, 1975; McClure, 1981; Rettig, 1980). Nurses perceived a role conflict between providing care to patients and doing research with patients. In fact, there was a widespread belief that "the good nurse was the bedside nurse" (Rettig, 1980, p.1253). Few nurses in practice settings recognized the link between research and professionalization or perceived a role for themselves in demonstrating through research the scientific basis of nursing practice (Boehm, 1985; McClure, 1981). Since that time, staff nurses' attitudes have been cited as one of the major obstacles to the implementation of nursing research activities within clinical settings (Bowie, 1981; Davis, 1981; Egan, McElmurry & Jameson, 1981; Noble, 1980; Oberst, 1985; Rettig, 1980).

Over the last decade, researchers in several countries have conducted studies to assess nurses' attitudes towards nursing research (Alcock, Carroll & Goodman, 1990; Bostrom, Malnight, MacDougall & Hargis, 1989; Chenitz, Satar & Giefer, 1985; Ehrenfeld & Eckerling, 1991; Marsh & Brown, 1992; Poster, Betz & Randell, 1992; Rizzuto, Bostrom, Suter & Chenitz, 1994; Robichaud-Ekstrand & Sherrard, 1994; Thomas, 1985; Webb & MacKenzie, 1993). On the whole, these studies showed that nurses of the late 1980s and '90s held more favourable attitudes toward research than their earlier counterparts. Furthermore, involvement of clinical nurses

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in research activities was found to be influenced predominantly by personal factors that included attitudes, beliefs, experience and education (Chenitz, Satar & Giefer, 1985; Rizzuto et al., 1994).

In Canada, a few studies have been conducted to assess nurses' perceptions of research (Alcock et al., 1990; Robichaud-Ekstrand & Sherrard, 1994; Varcoe & Hilton, 1995). In 1988, Alcock and colleagues designed a questionnaire to assess nurses' attitudes toward research and the research climate in the agency. Nurses' attitudes were conceptualized as consisting of beliefs or feelings about the value of research and staff nurses' role in research and behavioural statements reflecting experience and interest in research. Research climate was reflected by perceptions of supportive structures and awareness of resources available to aid research in the health care agency. Using the College of Nurses of Ontario membership listings, Alcock et al. (1990) surveyed a random sample of registered nurses working in a variety of hospital and community settings. They found that although the majority of nurses expressed interest in research and valued research, less than 50% perceived support or encouragement from nursing administration. Also, a large proportion (30-45%) of the nurses were not informed about research resources available in their own agency.

Using the same questionnaire, Robichaud-Ekstrand & Sherrard (1994) surveyed cardiac nurses employed at a teaching hospital in Quebec. Their findings showed that this group of nurses also valued nursing research, particularly as it related to clinical practice.

As in other specialty practices, research has played an integral part in developing oncology nursing's distinctive body of knowledge. However, a nursing research reality in oncology nursing will be achieved only if oncology nurses at all levels internalize the value of research and participate in the movement toward evidence-based practice. Furthermore, in light of current changes in the health care system which require all health care providers to examine their practice and provide justification for their role in the system, advancement of the research endeavour becomes even more pressing. It is toward these efforts that it is important to survey oncology nurses in clinical settings about their attitudes toward research.

To date, little is known of clinical oncology nurses' perceptions of research or about their perceived roles in research. No studies measuring oncology nurses' perceptions of research were found in the literature. Therefore, the purposes of this study were to examine clinical oncology nurses' perceptions of research and to determine factors influencing their perceptions.

Methods

Sample and setting

Health care agencies in northern Ontario with established formal or informal links to regional cancer centres were identified as potential research sites. In collaboration with outreach coordinators from the two northern regional cancer centres, nursing units providing cancer care were identified in 43 health care agencies. The number of RNs working on these units was estimated to be 444 nurses. All registered nurses working on these units were invited to participate in the study.

Data collection

Data about nurses' perceptions of research were collected using a self-report questionnaire developed by Alcock et al. (1990). The questionnaire consisted of five sections which addressed the following: 1) perceived value of nursing research; 2) perceived role in research; 3) interest in research; 4) experience in research; and 5) research climate of the agency, which included perceived support for nursing research and awareness of resources supporting research. Demographic data were also collected and included age, employment status, type of nursing education, the number of years since graduation, and characteristics of the work setting.

For the sections on perceived value, role, interest and research climate respondents rated items on a four-point Likert-type scale ranging from "strongly agree" to "strongly disagree". Items related to nurses' research experience were rated by a "yes" or "no", while statements pertaining to nurses' awareness of resources supporting research were rated by a "yes", "no", or "I don't know".

The questionnaire has been tested previously for content validity by expert nurses in clinical settings and by nurse researchers. Reliability analysis of the composite scores for each section indicated a high internal consistency among items in each of the five sections with alphas of over 0.71 (Alcock et al., 1990). Further psychometric testing of the questionnaire by Robichaud-Ekstrand and Sherrard (1994) provided evidence of construct and discriminant validity.

Questionnaire packages were distributed to all RNs working on the identified nursing units by contact persons at each of the 43 agencies. Nurses were instructed to return their completed, unsigned questionnaires directly to the researchers using the pre-stamped return envelope provided.

Data analysis

Data were analyzed by calculating the frequency response rate for each statement as well as estimating a mean score for each of the five variables of value, role, experience, interest and research climate. To identify factors influencing nurses' perceptions of research, one-way analyses of variance (ANOVA) or t-tests (using an alpha of 0.05) were performed on the five mean scores as a function of age, employment status, years since graduation, nursing education, work setting and agency location.

Results

Sample characteristics

In total, 444 questionnaires were distributed to 43 agencies. Two hundred and eighty-three nurses from 40 agencies returned their completed questionnaires for a response rate of 64%. Three agencies which were sent a total of 19 questionnaires did not respond. Table One describes the characteristics of the respondents. Fifty per cent of the nurses were 40 years of age or older; 70% were employed full-time; 71% had graduated more than 10 years ago and 79% had received their nursing education through community colleges or hospital-based nursing programs. In terms of work setting, 46% of respondents provided cancer care on inpatient units. The study sample was fairly evenly distributed in terms of agency designation as either urban (54% of sample) or rural (46% of sample). For the purpose of this study, the designation of urban was given to agencies that were located in towns or cities that had populations of 40,000 or more.

Table One: Characteristics of the sample (N=283)

Demographic variables	Number	%
Age Group		
≤ 29	47	16
30-39	96	34
40-49	101	36
50+	39	14
Employment status		
Full-time	197	70
Part-time/casual	84	30
Graduation		
10 years ago or less	81	29
More than 10 years ago	201	71
Education		
Diploma/Certificate	220	79
BScN	59	21
Work Setting		
inpatient	126	46
outpatient	62	22
inpatient/outpatient	57	21
community	31	11
Agency location		
Urban	152	54
Rural	131	46

In order to gain a perspective of how oncology nurses in northern Ontario who participated in the study reflected the population of nurses in Canada, the demographic factors of age, education and employment status were compared with the registered nurses management data from Statistics Canada (1993) (see Table Two). The study sample had a higher proportion of nurses in the youngest age category and a lower proportion of nurses in the oldest age category than nurses registered in Ontario and Canada ($p < 0.05$). In comparing employment status, the 70% full-time to 30% part-time status of the respondents was significantly different to the proportion of full-time to part-time employment status reflected in the populations of Ontario and Canadian nurses ($p < 0.05$). There was also a statistically significant difference found in the proportion of nurses prepared at the diploma versus BScN level when compared to nurses registered in Ontario ($p < 0.05$) with the respondents having a higher proportion of nurses who had obtained a baccalaureate nursing degree. In comparison to nurses registered in Canada, the test of concordance for education level was not significant at $p < 0.05$.

Perceptions of research

Table Three shows the mean score for each of the five variables calculated for the entire sample of oncology nurses. High scores indicate a more positive perception of the variable.

Value of research

As a group, the mean score for value indicates that nurses in this study perceived nursing research to be valuable and relevant to nursing practice (see Table Three). Ninety-five per cent of the sample agreed that research-based knowledge assists nurses in solving patient care problems and that research helps improve nursing practice. In addition, 88% indicated that research findings provide "the facts" needed to make clinical practice decisions, while a lesser percentage of respondents agreed that research is cost-effective (79%) or promotes accountability for practice (70%).

Staff nurses' role in research

The mean score for role in research shows that respondents accepted research as part of the staff nurse's responsibilities (see Table Three). This perception is most clearly indicated by the fact that almost all respondents agreed that staff nurses should play a role in identifying nursing care problems (99%), find ways to solve nursing care problems (99%), suggest ways to improve patient care (100%) and apply research findings to nursing practice (96%). Although a very high proportion of respondents (97%) indicated a definite role involvement for nurses in research that addressed

ways to improve the quality of nursing care, fewer respondents agreed that staff nurses should be involved in collecting data for nursing research studies (88%) or be conducting research studies (60%). Only half of the respondents (50%) indicated that nurses should be involved in collecting data for non-nursing studies.

Interest in research

The mean score for the variable of interest indicated that respondents were interested in research (see Table Three). However, from analysis of individual items on the questionnaire, the level of interest appeared to reflect the amount of active participation required by the nurse. For example, most nurses reported interest in such items as finding answers to specific nursing problems (95%) or knowing the results of research projects conducted on their unit (95%). As written, these questionnaire items did not describe a specific action on part of the nurse. The percentage of respondents indicating interest decreased when items reflected more active involvement by the nurse. For example, 82% of nurses reported interest in participating in research projects on their unit; 74% reported interest in reading about research studies and 58% of nurses indicated interest in being a member of a nursing research committee.

Research experience

The group of nurses participating in this survey had little research experience (see Table Three). Only about one-quarter of the respondents reported they had taken a research course, identified a problem leading to a research study, conducted research interviews, collected research specimens, or attended a research conference. The most frequent research activities experienced were changing nursing practice based on research findings (48%) and completing questionnaires for a research project (71%).

Research climate

The mean score for research climate indicated that respondents perceived that there was modest support for research in their respective agencies (see Table Three). With respect to administration support, more than half of the respondents (62%) reported that nursing administration was supportive of nurses involved in research projects, but less than half reported that nurses who participated in research received recognition for their participation (49%), or were encouraged by nursing administration to either question their practice (43%) or develop more effective and efficient methods of practice through research studies (43%). With respect to collegial support, the sample did not perceive much support from other nurses, as only 28% of respondents agreed that nurses were supportive of colleagues involved in research projects. In fact, the results indicated non-nurse colleagues were more supportive. For example, 45% of respondents perceived physicians to be supportive of nursing research and 71% perceived other disciplines such as dietitians and social workers to be interested in collaborating on research projects. Questionnaire items concerning the role of university nursing professors as resources or collaborators were not answered in this study by at least 20% of the sample. This large proportion of missing values most likely reflects the limited or lack of contact that these northern agencies have with university schools of nursing.

Table Two: Comparison of oncology nurses with a) RNs registered in Ontario and b) RNs registered in Canada

A. Nurse Group	Age (yrs)			
	≤ 29	30-39	40-49	50+
Oncology nurses (N=281)	16%	34%	36%	14%
RNs in Ontario (N=84,343)	13%*	30%	34%	23%*
RNs in Canada (N=235,630)	14%*	32%	33%	21%*

B. Nurse Group	Employment status	
	Full-time	Part-time/casual
Oncology nurses (N=281)	70%	30%
RNs in Ontario (N=84,343)	57%*	43%*
RNs in Canada (N=235,630)	59%*	41%*

C. Nurse Group	Education	
	Diploma	BScN
Oncology Nurses (N=279)	79%	21%
RNs in Ontario (N=84,343)	84%*	16%*
RNs in Canada (N=235,630)	83%	17%

* $p < 0.05$

Table Three: Oncology nurses' perceptions of research (N=283)

Variable	Mean (S.D.)	Possible Range of Scores
Value	15.5 (2.1)	5-20
Role	31.8 (3.7)	10-40
Interest	24.0 (2.5)	8-32
Experience	2.8 (2.5)	0-13
Research climate	23.0 (3.7)	9-36

In addition to perceptions of workplace support for research, research climate was assessed by determining nurses' awareness of resources available to support research in their health care agencies. The results showed that at least 20-30% of the sample were unaware if such resources existed. In terms of resources reported available: 53% of respondents indicated that library search services were accessible to nurses at their agency; 41% reported awareness of a research ethics review board at their agency and 34% indicated that a nursing representative was a member of the committee; 29% of respondents indicated computer services were available and only 15% indicated that secretarial support was available to nurses submitting research or grant proposals. Only 21% of respondents indicated that experienced researchers or individuals to assist with data analysis were available in their work environment.

Factors influencing nurses' perceptions of research

In order to identify whether any demographic factors might be influencing nurses' perceptions of research, the five mean scores in Table Three were analyzed as a function of age, employment status, years since graduation, education level, work setting and agency location (see Table Four). This analysis showed that only one factor influenced nurses' perceptions of research and that was the level of nursing education. A statistically significant difference was found in that nurses who were BScN prepared reported higher values for value, role, interest and experience in research but not for research climate.

Discussion

The goal of nursing research is to provide a scientific basis for nursing practice. Research is the tool for developing effective and efficient nursing care strategies and demonstrating that nursing interventions do make a difference in patient care. As such, it may be argued that the importance of nursing research is even more significant in a health care climate of change, diminishing resources and increased demand for professional accountability (Baumgart, 1995; Butler, 1995; Smeltzer & Hinshaw, 1993; Wong, 1996). However, to achieve the goal of research-based nursing practice and use research as a tool for change, it is imperative that nurses at all levels develop research-mindedness. Systematic assessment of nurses' attitudes toward research can provide information about nurses' research-mindedness, as well as identify factors that promote or hinder the research effort.

The overall findings of the present study suggest that nurses in cancer care settings are "buying into" and recognizing the value of nursing research. The results showed that the majority of oncology nurses surveyed held positive perceptions of nursing research by recognizing its value to clinical practice, expressing an interest in research activities and perceiving a research role for staff nurses. The level of research interest and perceived staff nurse's role reported by the study respondents were compatible with research responsibilities for clinical nurses that have been delineated by professional nursing associations (ANA, 1981; CNA, 1984; 1985; 1990). The respondents clearly accepted the staff nurse's responsibilities toward identifying relevant nursing care problems and utilizing research findings in

practice. Similar positive perceptions are supported by previous Canadian studies which examined clinical nurses' attitudes toward research using the same measurement tool (Alcock et al., 1990; Robichaud-Ekstrand & Sherrard, 1994; Varcoe & Hilton, 1995). As well, research on nurses' attitudes conducted in the United States, Israel and the United Kingdom over the past decade also supports an emerging research socialization of nurses involved in direct patient care (Bostrom et al., 1989; Ehrenfeld & Eckerling, 1991; Marsh & Brown, 1992; Poster et al., 1992; Rizzuto et al., 1994; Thomas, 1985; Webb & MacKenzie, 1993).

Although the findings of the present study support a positive trend toward research-mindedness among clinical nurses, the results also identify factors challenging the move to close the gap between research and practice. First, the study findings indicate that the respondents did not perceive strong administrative or collegial support for nurses' involvement in research activities. The perception that administrators and other nurses do not recognize and support nurses' research efforts in the clinical setting also has been reported by others (Alcock et al., 1990; Bostrom et al., 1989; Bowie, 1981). In addition, many nurses in the present study were unaware of resources to support nursing research in their agency. This lack of awareness may reflect the concomitant finding that the majority of respondents lacked previous research experience and thus had little use for or knowledge of such an organizational infrastructure. However, the lack of awareness may also reflect a neglect by health care administrators in taking steps to create and foster care settings that support evidence-based practice. While clinical nurses must shoulder individual professional responsibility in acquiring research-based knowledge, the process of research utilization only becomes a reality if the attitudes and actions of individual nurses are supported by an organizational culture that promotes and expects research-based nursing practice even in the face of health care reform (Baumgart, 1996; Vail & Hicks, 1996; Varcoe & Hilton, 1995).

A second issue raised by the results of the present study concerns factors that influence nurses' perceptions of research. Results of the present study showed that perceived value, role, interest and experience with research were influenced by educational preparation. That is, baccalaureate-prepared nurses scored higher than diploma-prepared nurses in perceived research value, staff nurses' role, interest and reported research experience. This finding may reflect a sampling bias in that the study sample contained more baccalaureate-prepared nurses than diploma-prepared nurses when compared with registered nurses in Ontario and Canada. Also, the finding may reflect the exposure baccalaureate nurses have to research courses and researchers during their university education. While on its own this finding may not be surprising, it does raise concerns on how research-mindedness is promoted among all members of the nursing profession. If, as a discipline, nursing values research and accepts it as a vital component in the growth of the profession and its body of knowledge, then how will nurse colleagues who have not been exposed to formal research education acquire research-mindedness? Are we to assume that this attitude will be fostered and developed in the workplace or through other means? Previous studies have shown that research attitudes were influenced by nurses' educational level. While most research has demonstrated that nurses with higher levels of education perceive nursing research more favourably (Alcock et al., 1990; Bostrom et al., 1989; Chenitz et al., 1985; Ehrenfeld & Eckerling, 1991), recent studies demonstrated the opposite (Robichaud-Eckstrand & Sherrard, 1994) or that education had limited effect (Varcoe & Hilton, 1995). For example, cardiac nurses with baccalaureate degrees who worked in a teaching hospital reported a lower perceived value of nursing research, felt that nursing research was a lesser part of their role, and expressed less interest in research than cardiac nurses with a diploma (Robichaud-Eckstrand & Sherrard, 1994). Although these authors do not speculate on this different finding, it may be that the milieu of a teaching hospital and/or the expertise of a clinical specialty also might play roles in the research socialization of nurses. Varcoe & Hilton (1995) suggest that their results showing that education has limited effect on clinical nurses' use of research findings may indicate that the quantity or quality of research education received by nurses and/or

Table Four: Significant differences in oncology nurses' perceptions of research, by education group

Variable	Education	
	Diploma (N=220) Mean (S.D.)	BScN (N=59) Mean (S.D.)
Value**	15.3 (2.1)	16.5 (2.0)
Role*	31.4 (3.6)	33.1 (3.6)
Interest*	23.6 (4.7)	25.6 (4.3)
Experience**	2.0 (1.9)	5.8 (2.3)
Research climate	22.9 (3.7)	23.4 (3.9)

*p<0.01 **p<0.001

workplace characteristics are factors impacting on nurses' research utilization in day-to-day practice settings.

Nurses' negative attitudes to research have long been cited as a major obstacle for closing the gap between research and practice. However, the results of the present study support the findings of other recent works about nurses' perceptions of research in sending a message to clinicians, researchers and administrators. Nurses working in clinical settings have different perceptions about research from those reported 15 to 20 years ago. Today's clinical nurses perceive a research role for the staff nurse and recognize how research contributes to the practice of nursing. Such perceptions are not only reported by Canadian nurses employed in large teaching hospitals, but also in community workplaces and in agencies located at a geographical distance from large health science research and teaching centres.

In times of fiscal constraint and health reform, it is easy to push aside the need for nurses to spend time on research activities. However, nurses involved in direct patient care are vital to the realization of

research-based practice. They hold front-line seats in identifying relevant clinical research questions and implementing the products of research that can impact on the quality of patient care. Their acceptance of the research effort is critical to closing the gap between research and practice. It is for these reasons that it is not only important to gauge nurses' attitudes toward research, but also for nurse researchers, educators and administrators to respond to these attitudes in the overall effort to provide evidence that what nurses do does make a difference in patient care.

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